

Amendments to the Claims:

This listing of the claims will replace all prior versions and listings of the claims in this application:

1-2. (Cancelled)

3. (Currently amended) ~~The~~ An apparatus of claim 2 for measuring current flow through a living body, comprising:

data acquisition circuitry consisting essentially of a first contact and a second contact to generate voltage data and a first connection connected at a first end to said first contact and a second connection connected at a first end to said second contact; and

a portable data processing unit connected to a second end of said first connection and to a second end of said second connection to process said voltage data to process said voltage data and body impedance data to produce current flow data, wherein said portable data processing unit includes acquired data conditioning circuitry to condition a data signal from said first contact and said second contact, wherein said acquired data conditioning circuitry includes an amplifier.

4. (Currently amended) The apparatus of claim 1 ~~3~~ wherein said portable data processing unit includes data input interface circuitry.

5. (Original) The apparatus of claim 4 further comprising a keypad connected with said data input interface circuitry.

6. (Currently amended) The apparatus of claim 1 ~~3~~ further comprising an autonomous power source.

7. (Currently amended) The apparatus of claim 1 ~~3~~ wherein said portable data processing unit includes data output interface circuitry.

8. (Original) The apparatus of claim 7 further comprising a visual display connected to said data output interface circuitry.

9. (Original) The apparatus of claim 7 further comprising a compact removable flash memory card connected to said data output interface circuitry.

10. (Cancelled)

11. (Currently amended) ~~The~~ An apparatus of claim 10 for measuring current flow through a living body, comprising:

data acquisition circuitry consisting essentially of a first contact and a second contact to generate voltage data and a first connection connected at a first end to said first contact and a second connection connected at a first end to said second contact; and

a portable data processing unit connected to a second end of said first connection and to a second end of said second connection to process said voltage data to process said voltage data and body impedance data to produce current flow data, wherein said portable data processing unit includes a central processing unit and a memory storing a set of executable programs wherein said memory stores said body impedance data comprised of known body impedances.

12. (Previously amended) The apparatus of claim 11 wherein said known body impedances include estimated impedances.

13. (Previously amended) The apparatus of claim 11 wherein said known body impedances include calculated impedance measurements.

14. (Currently amended) ~~The~~ An apparatus of claim 10 for measuring current flow through a living body, comprising:

data acquisition circuitry consisting essentially of a first contact and a second contact to generate voltage data and a first connection connected at a first end to said first contact and a second connection connected at a first end to said second contact; and

a portable data processing unit connected to a second end of said first connection and to a second end of said second connection to process said voltage data to process said voltage data and body impedance data to produce current flow data, wherein said portable data processing unit includes a central processing unit and a memory storing a set of executable

programs, wherein said memory stores a parameter calculator that compares conditioned data with known body impedances to generate data on said current flow through said living body.

15. (Currently amended) The apparatus of claim ~~40~~ 11 wherein said memory stores an output module that controls data storage to a removable flash memory.

16. (Currently amended) The apparatus of claim ~~40~~ 11 wherein said memory stores an output module that controls the menu of an LCD display.

17. (Previously added) An apparatus for measuring current flow through a living body, comprising:

data acquisition circuitry comprising a first contact and a second contact configured to generate voltage data from a living body; and

a data processing unit electrically connected to said data acquisition circuitry, wherein said data processing unit comprises a memory configured to store generic body impedance data and to calculate a current flow through said living body using said voltage data and said generic body impedance data.

18. (Previously added) The apparatus of claim 17, wherein said data processing unit further comprises:

at least two channels electrically connected to said first and second contacts, respectively, wherein each of said channels comprises a low noise filter, a high pass filter, a low pass filter, an adjustable threshold detector and an analog to digital converter;

a system bus electrically connected to said channels;

a central processing unit electrically connected to said system bus; and

wherein said memory is electrically connected to said system bus and comprises a set of executable programs.

19. (Previously added) The apparatus of claim 18, further comprising:

an LCD display electrically connected to said data processing unit;

a removable memory capable of being electrically connected to said data processing unit; and

an autonomous power supply electrically connected to said data processing unit.

20. (New) The apparatus of claim 17 wherein said data processing unit includes acquired data conditioning circuitry to condition a data signal from said first contact and said second contact.

21. (New) The apparatus of claim 20 wherein said acquired data conditioning circuitry includes an amplifier.

22. (New) The apparatus of claim 17 wherein said data processing unit includes data input interface circuitry.

23. (New) The apparatus of claim 22 further comprising a keypad connected with said data input interface circuitry.

24. (New) The apparatus of claim 17 further comprising an autonomous power source.

25. (New) The apparatus of claim 17 wherein said data processing unit includes data output interface circuitry.

26. (New) The apparatus of claim 25 further comprising a visual display connected to said data output interface circuitry.

27. (New) The apparatus of claim 25 further comprising a compact removable flash memory card connected to said data output interface circuitry.

28. (New) The apparatus of claim 17 wherein said memory is configured to store generic body impedance data comprising known body impedances.

29. (New) The apparatus of claim 28 wherein said known body impedances include estimated impedances.

30. (New) The apparatus of claim 28 wherein said known body impedances include calculated impedance measurements.

31. (New) The apparatus of claim 17 wherein said memory stores an output module that controls data storage to a removable flash memory card.

32. (New) The apparatus of claim 17 wherein said memory stores an output module that controls the menu of an LCD display.

33. (New) The apparatus of claim 14 wherein said memory stores an output module that controls data storage to a removable flash memory.

34. (New) The apparatus of claim 14 wherein said memory stores an output module that controls the menu of an LCD display.